Using R projects

What are R projects?

I stumbled across R projects when I was trying (and failing) to keep scripts in separate project directories organized AND accessible on multiple machines.

In my early days I was no stranger to having this at the top of each script:

```
setwd('path/that/only/ever/works/on/one/machine')
```

And while `setwd()` served it's purpose I often ended up frustrated when trying to change from project A to project B or working on my personal computer. And not to mention the impossibility of easily sharing code with this structure.

R Projects allows you to keep all files associated with a single project together – input data, R scripts, figures, etc. Likely you already have project specific folders to keep track of your work. R Projects fits right into this workflow.

Creating a new project is simple and RStudio provides a walkthrough for this.
Here's a real-time video of how to create a new R Project yourself:

Now your working directory will always start at the same level your R project file exists.

```
getwd()
```

```
## [1] "/Users/joy/Documents/GitHub/code_club/slides/20210924_JN"
```

Now whenever you refer to a file with a relative path, it will start by looking here.

Why use R projects

R projects are especially convenient if you want to simultaneously work in two project directories. All you have to do is navigate to the folders associated with the projects, and open the `.Rproj` file.
Additionally, you can now refer to files within this directory with relative path names.

```
readr::write_csv(diamonds, 'sample/diamonds.csv')
list.files('sample')
```

```
## [1] "diamonds.csv"
```

The here package

If you want to completely eliminate writing paths, I'd recommend checking out the `here` package.
`here` works hand in hand with Rprojects to allow you to easily build paths from the top-level directory

```r
library(here)
```

```
## here() starts at /Users/joy/Documents/GitHub/code_club/slides/20210924_JN
```

```r
here::here()
```

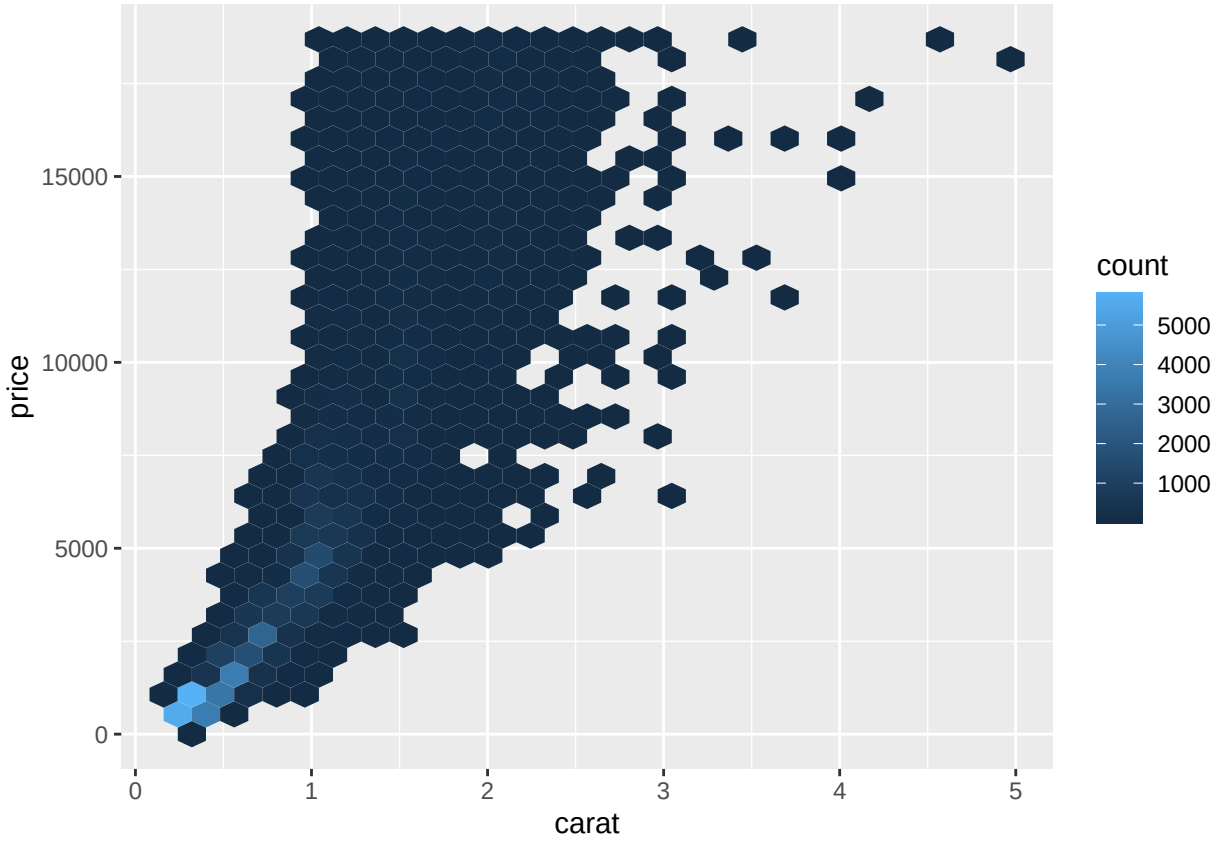
```
## [1] "/Users/joy/Documents/GitHub/code_club/slides/20210924_JN"
```

Now you can build paths relative to the top-level directory

```r
sample <- readr::read_csv(here::here('sample', 'diamonds.csv'))
```

```
## Parsed with column specification:
## cols(
##   carat = col_double(),
##   cut = col_character(),
##   color = col_character(),
##   clarity = col_character(),
##   depth = col_double(),
##   table = col_double(),
##   price = col_double(),
##   x = col_double(),
##   y = col_double(),
##   z = col_double()
## )
```

```r
ggplot2::ggplot(sample, aes(carat, price)) +
  geom_hex()
```



Again – these relative paths will work regardless of where the associated source file exists within the project. Using this combination of `R projects` and `here` allows you to easily navigate through your project directory and subdirectories without ever writing another full path name!